

Trend Study 25B-4-99

Study site name: Solomon Basin.

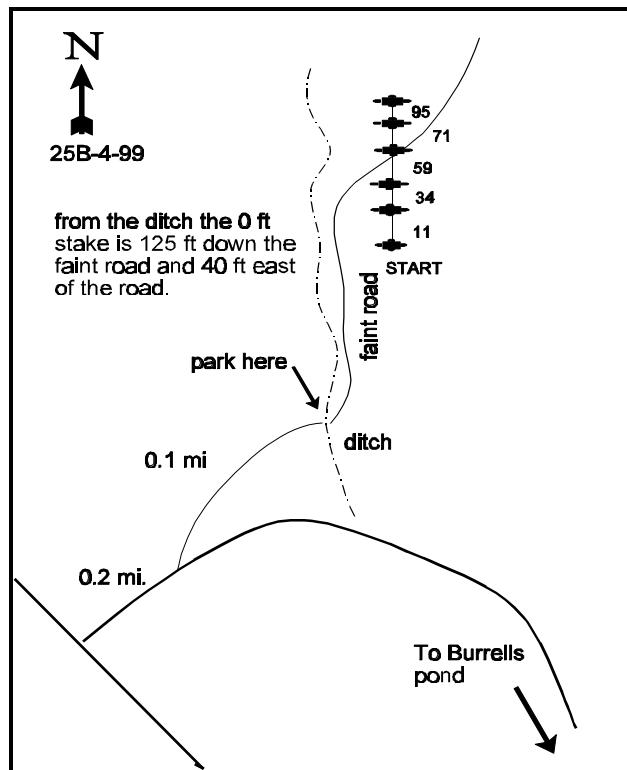
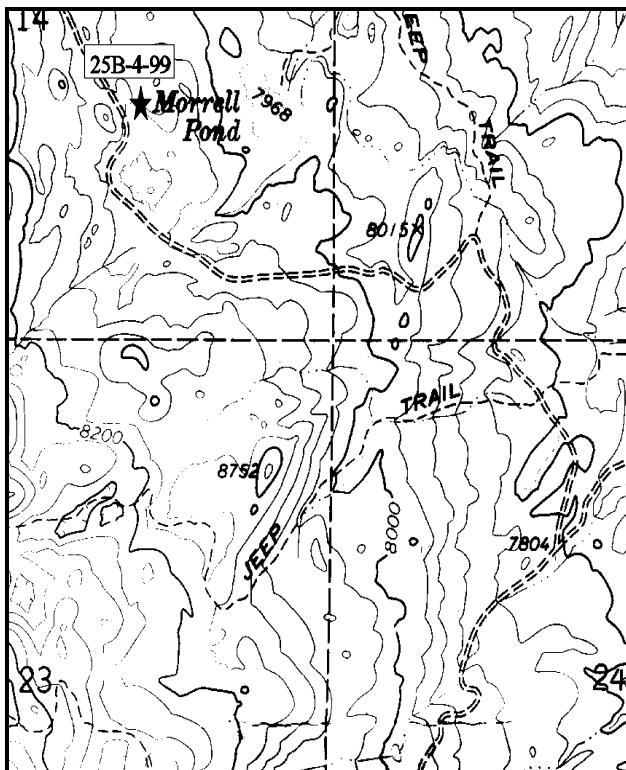
Range type: Mixed Mountain Brush.

Compass bearing: frequency baseline 320°M.

Footmark (first frame at) 5 feet, footmarks (frequency belts) line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95 ft).

LOCATION DESCRIPTION

Travel north from Fremont on SR 72 for 7.3 miles to the Elkhorn-Torrey Road. Turn right and go 2.9 miles to a cattleguard. From the cattleguard go 1.7 miles to an intersection by Heart Lake. Turn left toward Meeks Lake and go 3.0 miles to a cattleguard. Go another 1.9 miles on the main road to an intersection. Stay left and go 0.9 miles toward Solomon Basin. Stay left again, bypassing the Morrell Pond Road and continue 0.55 miles, passing a doughnut-shaped pond. Take a sharp right turn here and go 0.2 miles to another fork. Bear left (the right fork takes you to Morrells Pond) and drive less than 0.1 miles to a ditch. Park here (very faint) and walk down the ditch for approximately 125 feet. The 0-foot stake is approximately 40 feet east of the ditch and marked with browse tag #26.



Map Name: Geyser Peak, Utah

Diagrammatic Sketch

Township 26S, Range 4E, Section 14

UTM 4266794.909 N, 461694.276 E

DISCUSSION

Trend Study No. 25B-4 (46-4)

The Solomon Basin study samples important deer winter range on the gently rolling terrain of Solomon Basin. The initial site had to be relocated in 1994 because of a new road that went through the middle of the original transect. This new site is located between two low parallel ridges, within a moderately shallow and narrow ravine. The elevation is 8,000 feet. Slope varies from 0% to 20%, but on average it is about 5%. Aspect of the site is generally east, with the transect running to the north. The site is dominated by mature pinyon and in the vicinity are stands of aspen and open sagebrush flats. There is a pond nearby, which would tend to concentrate grazing in the area. This has a prevailing effect on the vegetative composition. The area is considered important to both livestock and wildlife. Pellet group data from the site in 1999 estimate 19 deer and 42 cow days use/acre (47 ddu/ha, 104 cdu/ha. Only one elk pellet group was encountered.

Besides being over grazed by sheep and cattle since the early 1900's, the area is also recognized as a key wintering area for deer. Heavy year-long livestock grazing historically has led to deterioration of the range and watershed values until the establishment of a management plan and rest-rotation grazing in 1967. There are several projects proposed by the Forest Service for the basin, including chaining and seeding pinyon-juniper woodlands and sagebrush treatments. Treatment of the mature pinyon-juniper community is a priority in the DWR management plan in order to provide more herbaceous spring forage and improve protective ground cover.

Excessive livestock trampling, removal of herbaceous vegetation, and rocky soil has led to soil loss. Erosion is not severe, but appears continual. The soil is moderately deep with an effective rooting depth of almost 19 inches with a neutral pH (7.3). The soil texture is a clay loam. Soil phosphorus was low at only 4.6 ppm, where 10 ppm is considered minimal for normal plant growth and development. Rock-pavement cover is relatively low at only about 14%. Litter accumulation occurs mostly under the pinyon, juniper, and sagebrush.

The dominant overstory is a mixture of mature pinyon pine with a few scattered juniper. The key browse species are mountain big sagebrush and black sagebrush. Together they contribute to over 50% of the browse cover. The plants on average have only received light to moderate use. The browse species that appear to be more preferred are Eriogonum, snowberry, Utah serviceberry, and winterfat. It is difficult to determine how much of the hedging has been done by deer, as cattle turn to browse when herbaceous plants are not available or scarce. Broom snakeweed and several species of rabbitbrush appear to be stable except for rubber rabbit brush which seems to be increasing. Pinyon and juniper also appear to be slowly invading.

Herbaceous plants are scattered throughout the sagebrush, pinyon and juniper. Even though there are about 10 species of grasses on the site, three species (blue grama, Salina wildrye, and Kentucky bluegrass) make up 95% of the total grass cover. Kentucky bluegrass is a valuable species because it is sod forming and somewhat resistant to grazing, however it is an increaser with moderate to heavy livestock grazing pressure. Along with the other grass species, they provide a small amount of fall forage. Forbs also have a low density and provide little forage. Other than dandelion (an increaser), Pingue hymenoxys (also an increaser) is the most common forb on the site.

1994 APPARENT TREND ASSESSMENT

The original study site had to be relocated because the road was moved and put through the middle of the baseline. Therefore, the data collected for the first site (1985 and 1991) are not included here so that there will be no confusion by trying to unknowingly compare the two sites. Soil trend would be considered stable at this time, but only in fair condition with 31% bare ground and only 30% litter cover. The two most abundant key browse species on the site are black sagebrush and mountain big sagebrush. The basic trend for

the original site since 1985 is that black sagebrush are slowly increasing while mountain big sagebrush was decreasing. The loss of mountain big sagebrush would be more significant because they are about three times taller than black sagebrush, making them more available for winter use. Trend for browse on the relocated site appears stable. They are both about equal in the amount of cover each contributes to the total browse cover. The trend for the herbaceous understory also appears stable without any previous data.

1999 TREND ASSESSMENT

Trend for soil is stable at this time, with little changes in percent bare soil and litter cover. The ratio of bare soil to protective cover is slightly better, but still poor at less than 1:2. The two most abundant browse species on the site are black sagebrush and mountain big sagebrush. The basic trend for the new site is that black sagebrush appears to be slowly increasing, while mountain big sagebrush is slowly decreasing. The mountain big sagebrush would be more effected by the extended drought since 1985 than black sagebrush. The loss of mountain big sagebrush would be more significant in that they are about three times taller than black sagebrush, making them more available for winter use with moderately deep snow. Trend for browse would still be stable with some losses to mountain big sagebrush, but gains to black sagebrush. They are both about equal in the amount of cover each contributes to the total browse cover. As indicated by the lower sum of nested frequency values, the trend for the herbaceous understory is down for both grasses and forbs.

TREND ASSESSMENT

soil - stable, but only fair condition

browse - stable overall

herbaceous understory - slightly down

HERBACEOUS TRENDS --

Herd unit 25B, Study no: 4

T y p e	Species	Nested Frequency		Quadrat Frequency		Average Cover %	
		'94	'99	'94	'99	'94	'99
G	Agropyron smithii	-	1	-	1	-	.00
G	Agropyron spicatum	-	4	-	2	-	.03
G	Bouteloua gracilis	56	*35	20	13	.78	1.45
G	Carex spp.	23	16	7	5	.16	.12
G	Elymus salina	201	*168	69	54	5.25	4.33
G	Festuca ovina	10	3	2	1	.18	.03
G	Oryzopsis hymenoides	16	*3	9	1	.09	.15
G	Poa fendleriana	-	*6	-	3	-	.06
G	Poa pratensis	65	76	20	19	2.55	5.40
G	Poa secunda	7	*-	3	-	.01	-
G	Sitanion hystrix	11	12	5	5	.05	.12
G	Stipa columbiana	4	-	2	-	.03	-
G	Stipa comata	6	-	2	-	.03	-
Total for Annual Grasses		0	0	0	0	0	0
Total for Perennial Grasses		399	324	139	104	9.16	11.73
Total for Grasses		399	324	139	104	9.16	11.73

T y p e	Species	Nested Frequency '94 '99		Quadrat Frequency '94 '99		Average Cover % '94 '99	
F	<i>Antennaria rosea</i>	5	*5	1	1	.15	.38
F	<i>Androsace septentrionalis</i> (a)	-	2	-	1	-	.00
F	<i>Arabis demissa</i>	-	*5	-	3	-	.01
F	<i>Artemisia ludoviciana</i>	3	4	1	1	.03	.15
F	<i>Astragalus convallarius</i>	6	6	2	3	.01	.04
F	<i>Astragalus miser</i>	-	1	-	1	-	.00
F	<i>Aster</i> spp.	5	18	3	8	.01	.36
F	<i>Astragalus</i> spp.	11	1	5	1	.02	.00
F	<i>Castilleja linariaefolia</i>	7	3	4	2	.02	.03
F	<i>Cirsium</i> spp.	9	9	4	5	.07	.22
F	<i>Cryptantha</i> spp.	11	3	6	3	.05	.04
F	<i>Erigeron pumilus</i>	18	4	7	3	.03	.01
F	<i>Eriogonum racemosum</i>	-	-	-	-	-	.00
F	<i>Hymenoxys richardsonii</i>	57	38	29	22	.62	.69
F	<i>Lesquerella</i> spp.	3	-	1	-	.00	-
F	<i>Machaeranthera canescens</i>	36	*11	13	6	.38	.49
F	<i>Microsteris gracilis</i> (a)	3	-	1	-	.00	-
F	<i>Penstemon</i> spp.	2	4	1	3	.00	.04
F	<i>Phlox longifolia</i>	11	9	5	3	.02	.01
F	<i>Schoencrambe linifolia</i>	7	*-	4	-	.04	-
F	<i>Senecio multilobatus</i>	-	3	-	1	-	.00
F	<i>Sphaeralcea coccinea</i>	4	2	2	2	.01	.03
F	<i>Taraxacum officinale</i>	18	*52	6	14	.49	1.85
F	Unknown forb-perennial	-	1	-	1	-	.00
Total for Annual Forbs		3	2	1	1	0.00	0.00
Total for Perennial Forbs		213	179	94	83	2.00	4.40
Total for Forbs		216	181	95	84	2.00	4.41

* Indicates significant difference at % = 0.10

BROWSE TRENDS --

Herd unit 25B, Study no: 4

T y p e	Species	Strip Frequency		Average Cover %	
		'94	'99	'94	'99
B	Amelanchier utahensis	9	5	.63	.03
B	Artemisia frigida	1	1	-	-
B	Artemisia nova	39	57	4.28	6.84
B	Artemisia tridentata tridentata	-	-	-	.15
B	Artemisia tridentata vaseyana	24	32	3.94	6.58
B	Atriplex canescens	0	0	-	-
B	Ceratoides lanata	9	0	.21	-
B	Cercocarpus ledifolius	0	8	-	.18
B	Chrysothamnus nauseosus	17	18	2.23	3.11
B	Chrysothamnus viscidiflorus viscidiflorus	50	42	2.21	1.47
B	Cowania mexicana stansburiana	0	2	-	.15
B	Coryphantha vivipara arizonica	0	1	-	.00
B	Eriogonum corymbosum	22	21	.88	1.17
B	Gutierrezia sarothrae	53	49	1.27	1.00
B	Juniperus osteosperma	0	1	.15	.15
B	Opuntia spp.	2	2	.01	-
B	Pediocactus simpsonii	0	2	-	.03
B	Pinus edulis	0	13	3.49	4.09
B	Symphoricarpos oreophilus	5	8	.16	.48
B	Tetradymia canescens	14	17	.10	.24
B	Yucca harrimaniae	0	2	-	.18
Total for Browse		245	281	19.60	25.92

CANOPY COVER --

Herd unit 25B, Study no: 4

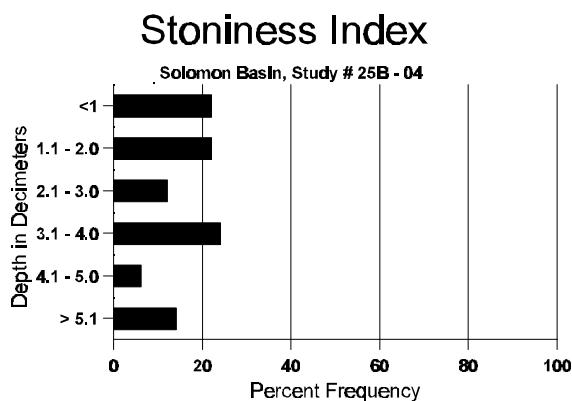
Species	Percent Cover '99
Amelanchier utahensis	2
Pinus edulis	8

BASIC COVER --
Herd unit 25B, Study no: 4

Cover Type	Nested Frequency '94 '99		Average Cover % '94 '99	
Vegetation	339	340	27.32	38.12
Rock	255	169	5.05	2.79
Pavement	340	328	4.77	10.95
Litter	448	420	29.63	31.77
Cryptogams	9	23	.30	.43
Bare Ground	377	351	31.40	29.84

SOIL ANALYSIS DATA --
Herd Unit 25B, Study # 04, Study Name: Solomon Basin

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
18.7	52.0 (16.4)	7.3	44.2	20.2	35.6	2.0	4.6	208.0	0.5



PELLET GROUP FREQUENCY --
Herd unit 25B, Study no: 4

Type	Quadrat Frequency '94 '99		Pellet Transect Days Use/Acre (ha) '99
Rabbit	5	12	n/a
Elk	-	1	1 (2)
Deer	11	6	19 (47)
Cattle	1	9	42 (104)

BROWSE CHARACTERISTICS --

Herd unit 25B, Study no: 4

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Amelanchier utahensis																	
S 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
99	1	-	-	1	-	-	-	-	-	-	2	-	-	-	40		2
Y 94	1	-	-	-	-	-	-	-	-	-	1	-	-	-	20		1
99	-	-	-	1	-	-	-	-	-	-	1	-	-	-	20		1
M 94	11	1	1	-	-	-	-	-	-	-	13	-	-	-	260	33 42	13
99	-	1	-	-	1	-	-	-	-	-	2	-	-	-	40	50 57	2
D 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
99	-	-	-	3	-	-	-	-	-	-	1	-	1	1	60		3
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'94			07%			07%			00%							-57%
	'99			33%			00%			33%							
Total Plants/Acre (excluding Dead & Seedlings)												'94	280	Dec:	0%		
												'99	120		50%		
Artemisia frigida																	
M 94	2	-	-	-	-	-	-	-	-	-	2	-	-	-	40	1 2	2
99	1	-	-	-	-	-	-	-	-	-	1	-	-	-	20	2 6	1
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'94			00%			00%			00%							-50%
	'99			00%			00%			00%							
Total Plants/Acre (excluding Dead & Seedlings)												'94	40	Dec:	-		
												'99	20		-		
Artemisia nova																	
S 94	2	-	-	-	-	-	-	-	-	-	2	-	-	-	40		2
99	7	-	-	-	-	-	-	2	-	-	9	-	-	-	180		9
Y 94	7	-	-	-	-	-	-	-	-	-	7	-	-	-	140		7
99	43	-	-	1	-	-	-	1	-	-	45	-	-	-	900		45
M 94	149	5	1	-	-	-	-	-	-	-	155	-	-	-	3100	10 16	155
99	111	35	2	4	-	-	2	-	-	-	154	-	-	-	3080	8 17	154
D 94	40	5	-	-	-	-	-	-	-	-	33	-	-	12	900		45
99	14	16	4	1	-	-	-	-	-	-	33	1	-	1	700		35
X 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60		3
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	240		12
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>					
	'94			05%			.48%			06%							+12%
	'99			22%			03%			.42%							
Total Plants/Acre (excluding Dead & Seedlings)												'94	4140	Dec:	22%		
												'99	4680		15%		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total						
		1	2	3	4	5	6	7	8	9	1	2	3	4									
Artemesia tridentata vaseyana																							
Y 94	-	27	-	-	-	-	-	-	-	-	27	-	-	-	540		27						
99	-	5	-	-	-	-	-	-	-	-	3	-	-	-	100		5						
M 94	-	42	1	-	-	-	-	-	-	-	43	-	-	-	860	19 28	43						
99	-	43	11	-	-	-	-	-	-	-	53	1	-	-	1080	23 36	54						
D 94	-	5	-	-	-	-	-	-	-	-	2	-	-	3	100		5						
99	-	5	1	2	1	-	-	-	-	-	6	1	-	2	180		9						
X 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140		7						
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0						
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>												
'94		01%			00%			04%			- 9%												
'99		18%			03%			03%															
Total Plants/Acre (excluding Dead & Seedlings)										'94	1500	Dec:		7%									
										'99	1360			13%									
Atriplex canescens																							
M 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	28 23	0						
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	37 32	0						
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>												
'94		00%			00%			00%															
'99		00%			00%			00%															
Total Plants/Acre (excluding Dead & Seedlings)										'94	0	Dec:		-									
										'99	0			-									
Ceratoides lanata																							
M 94	-	3	11	5	-	-	-	-	-	-	19	-	-	-	380	6 6	19						
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0						
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>												
'94		58%			26%			00%															
'99		00%			00%			00%															
Total Plants/Acre (excluding Dead & Seedlings)										'94	380	Dec:		-									
										'99	0			-									
Cercocarpus ledifolius																							
S 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0						
99	-	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1						
Y 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0						
99	-	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3						
M 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0						
99	-	-	14	-	1	3	-	-	-	-	18	-	-	-	360	4 7	18						
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>												
'94		00%			00%			00%															
'99		19%			81%			00%															
Total Plants/Acre (excluding Dead & Seedlings)										'94	0	Dec:		-									
										'99	420			-									

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Cercocarpus montanus																	
M 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15	24
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
'94		00%			00%			00%									
'99		00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'94	0	Dec:	-		
												'99	0				
Chrysothamnus depressus																	
M 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	12
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
'94		00%			00%			00%									
'99		00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'94	0	Dec:	-		
												'99	0				
Chrysothamnus nauseosus																	
S 94	-	-	-	1	-	-	-	-	-	-	1	-	-	-	20		1
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
Y 94	2	-	-	-	-	-	-	-	-	-	2	-	-	-	40		2
99	6	-	-	-	-	-	-	-	-	-	6	-	-	-	120		6
M 94	28	-	1	-	-	-	-	-	-	-	29	-	-	-	580	27	29
99	29	-	-	-	-	-	-	-	-	-	29	-	-	-	580	34	39
D 94	1	-	-	-	-	-	-	-	-	-	1	-	-	-	20		1
99	6	-	-	-	-	-	-	-	-	-	3	-	1	2	120		6
X 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
'94		00%			03%			00%				+22%					
'99		00%			00%			07%									
Total Plants/Acre (excluding Dead & Seedlings)												'94	640	Dec:	3%		
												'99	820		15%		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total										
		1	2	3	4	5	6	7	8	9	1	2	3	4													
Chrysothamnus viscidiflorus viscidiflorus																											
S 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
99	1	-	-	-	-	-	-	-	-	-	1	-	-	-	20		1										
Y 94	10	-	-	-	-	-	-	-	-	-	10	-	-	-	200		10										
99	16	-	-	-	-	-	-	-	-	-	16	-	-	-	320		16										
M 94	104	3	3	-	-	-	-	-	-	-	110	-	-	-	2200	9 16	110										
99	65	-	-	-	-	-	-	-	-	-	65	2	-	-	1340	12 16	67										
D 94	15	1	-	-	-	-	-	-	-	-	9	-	-	7	320		16										
99	17	-	-	1	-	-	-	-	-	-	12	-	-	6	360		18										
X 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1										
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1										
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>															
'94		03%			02%			05%				-26%															
'99		00%			00%			06%																			
Total Plants/Acre (excluding Dead & Seedlings)												'94	2720	Dec:	12%												
												'99	2020		18%												
Cowenia mexicana stansburiana																											
S 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
99	1	-	-	-	-	-	-	-	-	-	1	-	-	-	20		1										
D 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
99	1	1	-	-	-	-	-	-	-	-	2	-	-	-	40		2										
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>															
'94		00%			00%			00%																			
'99		50%			00%			00%																			
Total Plants/Acre (excluding Dead & Seedlings)												'94	0	Dec:	0%												
												'99	40		100%												
Coryphantha vivipara arizonica																											
M 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0										
99	-	-	-	-	-	-	1	-	-	-	1	-	-	-	20	1 4	1										
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>															
'94		00%			00%			00%																			
'99		00%			100%			00%																			
Total Plants/Acre (excluding Dead & Seedlings)												'94	0	Dec:	-												
												'99	20		-												

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total									
		1	2	3	4	5	6	7	8	9	1	2	3	4												
<i>Eriogonum corymbosum</i>																										
S 94	-	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2									
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
Y 94	-	2	-	5	4	6	-	-	-	-	11	6	-	-	340		17									
	-	22	1	-	-	-	-	-	-	-	23	-	-	-	460		23									
M 94	-	22	27	6	20	20	21	-	-	-	116	-	-	-	2320	4 8	116									
	-	36	19	9	2	-	3	-	-	-	69	-	-	-	1380	9 16	69									
D 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
	-	12	1	-	-	-	-	-	-	-	11	-	-	2	260		13									
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>														
'94			40%			24%			00%			-21%														
'99			20%			11%			02%																	
Total Plants/Acre (excluding Dead & Seedlings)												'94	2660	Dec:	0%											
												'99	2100			12%										
<i>Gutierrezia sarothrae</i>																										
S 94	-	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2									
	-	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5									
Y 94	-	23	-	-	-	-	-	-	-	-	23	-	-	-	460		23									
	-	21	-	-	-	-	-	-	-	-	21	-	-	-	420		21									
M 94	-	186	-	-	1	-	-	-	-	-	187	-	-	-	3740	6 5	187									
	-	179	-	1	-	-	-	-	-	-	180	-	-	-	3600	7 7	180									
D 94	-	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4									
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
X 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100		5									
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100		5									
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>														
'94			00%			00%			00%			- 6%														
'99			00%			.49%			00%																	
Total Plants/Acre (excluding Dead & Seedlings)												'94	4280	Dec:	2%											
												'99	4020		0%											
<i>Juniperus osteosperma</i>																										
Y 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0									
	-	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1									
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>														
'94			00%			00%			00%																	
'99			00%			00%			00%																	
Total Plants/Acre (excluding Dead & Seedlings)												'94	0	Dec:	-											
												'99	20		-											
<i>Opuntia spp.</i>																										
M 94	-	2	-	-	-	-	-	-	-	-	2	-	-	-	40	1 2	2									
	-	2	-	-	-	-	-	-	-	-	2	-	-	-	40	- -	2									
% Plants Showing			<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>														
'94			00%			00%			00%			+ 0%														
'99			00%			00%			00%																	
Total Plants/Acre (excluding Dead & Seedlings)												'94	40	Dec:	-											
												'99	40		-											

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
<i>Pediocactus simpsonii</i>																	
M 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	0
M 99	2	-	-	-	-	-	-	-	-	-	2	-	-	-	40	2	2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'94	00%			00%			00%									
	'99	00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'94	0	Dec:	-		
												'99	40		-		
<i>Pinus edulis</i>																	
S 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
S 99	6	-	-	-	-	-	-	1	-	-	7	-	-	-	140		7
Y 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
Y 99	13	-	-	-	-	-	-	-	-	-	12	1	-	-	260		13
M 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
M 99	-	-	-	-	-	-	-	-	1	-	1	-	-	-	20	-	1
X 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
X 99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'94	00%			00%			00%									
	'99	00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'94	0	Dec:	-		
												'99	280		-		
<i>Ribes spp.</i>																	
M 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	26	0
M 99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'94	00%			00%			00%									
	'99	00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'94	0	Dec:	-		
												'99	0		-		
<i>Syphoricarpos oreophilus</i>																	
S 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
S 99	1	-	-	-	-	-	-	1	-	-	2	-	-	-	40		2
Y 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
Y 99	2	1	-	-	-	-	-	-	-	-	3	-	-	-	60		3
M 94	5	-	1	-	-	-	-	-	-	-	6	-	-	-	120	15	6
M 99	10	-	-	-	-	-	-	-	-	-	10	-	-	-	200	16	10
D 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
D 99	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	20	1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>					
	'94	00%			17%			00%				+57%					
	'99	07%			00%			07%									
Total Plants/Acre (excluding Dead & Seedlings)												'94	120	Dec:	0%		
												'99	280		7%		

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total										
		1	2	3	4	5	6	7	8	9	1	2	3	4													
Tetradymia canescens																											
S 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
99	2	-	-	-	-	-	-	-	-	-	2	-	-	-	40		2										
Y 94	3	-	-	-	-	-	-	-	-	-	3	-	-	-	60		3										
99	6	-	-	-	-	-	-	-	-	-	4	2	-	-	120		6										
M 94	20	-	-	2	-	-	-	-	-	-	21	-	1	-	440	10 17	22										
99	15	-	1	1	-	-	-	-	-	-	17	-	-	-	340	10 15	17										
D 94	1	-	-	-	-	-	-	-	-	-	-	-	-	1	20		1										
99	2	1	-	-	3	-	-	-	-	-	4	-	-	2	120		6										
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>															
'94		00%			00%			08%				+10%															
'99		14%			03%			07%																			
Total Plants/Acre (excluding Dead & Seedlings)												'94	520	Dec:	4%												
												'99	580		21%												
Yucca harrimaniae																											
M 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0										
99	9	-	-	-	-	-	-	-	-	-	9	-	-	-	180	13 16	9										
X 94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0										
99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60		3										
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>															
'94		00%			00%			00%																			
'99		00%			00%			00%																			
Total Plants/Acre (excluding Dead & Seedlings)												'94	0	Dec:	-												
												'99	180		-												